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JP2002345158 - METHOD AND APPARATUS FOR CONFIRMING CHARGING AMOUNT AND DETERIORATION CONDITI...

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| FAN | 20042801328506 |
| PN | JP2002345158 A 20021129 [JP2002345158] STG : Doc. Laid open to publ. Inspec. AP : 2001JP-0145591 20010515 JP3679348 B2 20050803 [JP3679348] STG : Grant. Pat. With A from 2500000 on |
| TI | METHOD AND APPARATUS FOR CONFIRMING CHARGING AMOUNT AND DETERIORATION CONDITION OF BATTERY, RECORDING MEDIUM, INFORMATION PROCESSING DEVICE, AND ELECTRONIC EQUIPMENT |
| PA | TOYO SYSTEM CO LTD |
| IN | SHOJI HIDEKI |
| PR | 2001JP-0145591 20010515 |
| IC | G01R-031/36 H01M-010/48 H02J-007/00 |
| ICAA | G01R-031/36 [2006-01 A - I R M EP] |
| ICCA | G01R-031/36 [2006 C - I R M EP] |
| EC | G01R-031/36V6 |
| FI | G01R31/36 A; H02J7/00 Q; H01M10/48 P |
| FTM | 2G016 CB11; 2G016 CB12; 2G016 CB21; 2G016 CB31; 2G016 CC01; 2G016 CC03; 2G016 CC04; 2G016 CC06; 2G016 CC09; 2G016 CC10; 2G016 CC21; 2G016 CC23; 2G016 CC27; 2G016 CC28; 2G016 CD02; 2G016 CE03; 2G016 CF06; 5G003 AA01; 5G003 BA01; 5G003 EA05; 5G003 EA09; 5G003 GC05; 5H030 AS11; 5H030 FF42; 5H030 FF43; 5H030 FF44; 5H030 FF52 |
| CT | (JP2002345158) [19] Citation as reason for refusal of an application JP (A) 2001051029 [JP2001051029] JP (A) 1999133122 [JP11133122] JP (A) 1999014718 [JP11014718] JP (A) 1998142302 [JP10142302] |
| AB | (JP2002345158) PROBLEM TO BE SOLVED: To estimate the charging amount and deterioration conditions of a battery, based on charging/discharging characteristics of the battery. SOLUTION: For the battery to be measured, one or more types of measurements are selected from among voltages at release of the battery, current and voltage at the time of discharging, and current and voltage at charging at one environmental temperature among the low, ordinary, and high temperatures, and measurements for a plurality times are performed at regular time intervals. The measurement result of the battery to be measured is compared to a value in a determining table in the same measurement method. By means of the comparison with the determining table, it is possible to estimate present charging amount and the deterioration condition of the battery to be measured in a short time, based on the position of the determining table. COPYRIGHT: (C)2003,JPO |
| UP | 2003-05 |

Search statement 2

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Inpadoc

Family

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FILE 'INPADOC' ENTERED AT 08:54:15 ON 07 SEP 2006
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| E1 | 1 | JP2002345156/PN |
| E2 | 1 | JP2002345157/PN |
| E3 | 1 --> | JP2002345158/PN |
| E4 | 1 | JP2002345159/PN |
| E5 | 1 | JP2002345160/PN |
| E6 | 1 | JP2002345161/PN |
| E7 | 1 | JP2002345162/PN |

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L1 ANSWER 1 OF 1 INPADOC COPYRIGHT 2006 EPO on STN

PATENT FAMILY INFORMATION
AN 196102373 INPADOC

PRIORITY (1): JP 2001-145591 A 20010515

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JP 2001-145591 A 20010515

+-----PI-----+
JP 2002345158 A2 20021129
JP 3679348B B2 20050803

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Derwent World Patents Index Family Data

DERWENT-ACC-NO: 2003-086944

DERWENT-WEEK: 200551

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TITLE: Battery charge amount and deterioration state
confirmation method in electronic device, involves
generating evaluation table based on measured voltages at
time of charging and discharging of battery

PATENT-ASSIGNEE: TOYO SYSTEM KK[TOSYN]

PRIORITY-DATA: 2001JP-0145591 (May 15, 2001)

PATENT-FAMILY:

| PUB-NO | PUB-DATE | LANGUAGE | PAGES | |
|------------------------|-------------------|----------|-------|------|
| MAIN-IPC | | | | |
| JP 3679348 B2 | August 3, 2005 | N/A | 025 | H02J |
| 007/00 | | | | |
| JP <u>2002345158</u> A | November 29, 2002 | N/A | 017 | H02J |
| 007/00 | | | | |

APPLICATION-DATA:

| PUB-NO | APPL-DESCRIPTOR | APPL-NO | APPL-DATE |
|---------------|-----------------|----------------|--------------|
| JP 3679348B2 | N/A | 2001JP-0145591 | May 15, 2001 |
| JP 3679348B2 | Previous Publ. | JP2002345158 | N/A |
| JP2002345158A | N/A | 2001JP-0145591 | May 15, 2001 |

INT-CL (IPC): G01R031/36, H01M010/48 , H02J007/00

ABSTRACTED-PUB-NO: JP2002345158A

BASIC-ABSTRACT:

NOVELTY - The voltages at the time of charging and discharging of a battery are measured at predetermined time intervals. An evaluation table is generated based on each measured value. The current charge amount and deterioration state of the battery are confirmed by comparing the current battery conditions with the values of the evaluation table.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) Battery charge amount and deterioration state confirmation apparatus;
- (2) Storage medium for storing battery charge amount and deterioration state confirmation program;
- (3) Information processor; and
- (4) Electronic device.

USE - For confirming charge amount and deterioration state of battery used in electronic device (claimed).

ADVANTAGE - Since the charge amount and deterioration state of battery are confirmed, complete usage of battery is ensured.

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| E4 | 1 | JP2002345159/PN |
| E5 | 1 | JP2002345160/PN |
| E6 | 1 | JP2002345161/PN |
| E7 | 1 | JP2002345162/PN |
| E8 | 1 | JP2002345163/PN |
| E9 | 1 | JP2002345164/PN |
| E10 | 1 | JP2002345165/PN |
| E11 | 1 | JP2002345166/PN |
| E12 | 1 | JP2002345167/PN |

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PATENT FAMILY INFORMATION
AN 196102373 INPADOC

PRIORITY (1): JP 2001-145591 A 20010515

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JP 2001-145591 A 20010515

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JP 2002345158 A2 20021129
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